

Important Advances in Clinical Medicine

Epitomes of Progress -- Pediatrics

The Scientific Board of the California Medical Association presents the following inventory of items of progress in Pediatrics. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in Pediatrics which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Pediatrics of the California Medical Association and the summaries were prepared under its direction.

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Synthesized Releasing Hormones

During the early 1940's it was suggested that hypothalamic control over the release of anterior pituitary hormones was exerted by substances secreted into the hypothalamo-hypophyseal portal vessels. Some of these agents or releasing factors have since been isolated. A major recent advance in endocrinology has been the isolation, determination of structure, and synthesis of thyrotropin releasing hormone (TRH), a tripeptide, by Guillemin and by Schally, and

luteinizing hormone-releasing hormone (LH-RH), a decapeptide, by Schally and his co-workers. The availability of synthesized releasing hormones has made it possible to further investigate anterior pituitary function, and it has been shown that the administration of TRH results in increased levels of serum prolactin, as well as thyroid stimulating hormone (TSH) in man. LH-RH administration causes increased release of luteinizing hormone and follicle stimulating hormone in man. These studies indicate that releasing hormones may have similar or identical structures, suggesting that anterior pituitary cells may exhibit varying responses to stimulation at different times, which may account for secretion of different trophic hormones. It has been shown that when TRH is given to hypopituitary

children, increased TSH release occurs in some, indicating that the primary deficiency may be at the hypothalamic level and that such patients do not have primary hypopituitarism. The availability of synthetic releasing hormones may be expected to open new avenues in the investigation of control of anterior pituitary function and may provide agents useful in the treatment of tropin-deficient patients. Mass production of these synthetic agents is of course far more practical than the synthesis of pituitary peptide hormones, and it is possible that oral administration of the former may be effective; for example, oral administration of TRH has been shown to be effective in experimental animals. Moreover, antibody formation in response to the administration of the releasing hormones is much less likely to occur.

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Acute Cerebellar Encephalopathy as a Remote Complication of Neuroblastoma

Diagnostic considerations for a sick child who suddenly becomes very ataxic always include drug intoxication, encephalitis and brain tumor. Less common is the sudden development, in an infant or young child, of wild, chaotic, nystagmoid eye movements, irritability and diffuse clonic muscle activity in the extremities (with normal electroencephalogram). This disorder appears in the literature under various descriptive headings including opsoclonus, acute cerebellar ataxia, pontine encephalitis, myoclonic encephalopathy of infancy, ataxic conjugate movements of the eyes or the syndrome of "dancing eyes and dancing feet." We prefer the term *acute cerebellar encephalopathy*, because most

of the patients we have seen with the disorder have persistent dementia even though the ataxic movement disorder is the most prominent early sign.

Etiologic factors may be variable, but it has become clear that a significant association exists between this distinctive encephalopathy and a neuroblastoma which is often inapparent. The tumor may arise anywhere along the paraspinal sympathetic ganglia including the adrenal gland. Autopsy studies of a few patients have revealed findings which are consistent in location but variable in severity—atrophy of cerebellar cortex, especially Purkinje cells and loss of nerve cells from the dentate nucleus. What the interrelationship is between a silent neuroblastoma and remote damage to the brain is not clear.

From a practical standpoint, patients who present with this neurologic syndrome should be surveyed carefully for an inapparent neuroblastoma because it is one of the commoner malignant lesions of childhood and the cure rate is unusually high, especially in young children who are treated intensively. The clinical and laboratory survey should include (1) chest and skeletal x-rays, (2) intravenous urogram, (3) quantitative determination of urinary VMA, and (4) a bone marrow examination for malignant cells.

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Salt Poisoning from Saline Emetics

Hypertonic solutions of sodium prepared with common table salt or baking soda have been recommended for induction of emesis in the management of poisoning and overdose, appearing on product labels, in first aid manuals, and in the poison control and pediatric literature.

Iatrogenic salt poisoning is being reported more frequently as a consequence of these recommendations and after gastric lavage with hypertonic sodium solutions and, intra-amniotic